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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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26161	7590	09/22/2006	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			CAVALLARI, DANIEL J	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/743,345	Applicant(s) WIEDEMUTH ET AL.	
	Examiner Daniel J. Cavallari	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/18/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 2/18/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "...measuring device includes a signal matching circuit for converting a voltage, a voltage/current converter for converting the output voltage of the signal matching circuit into a current, and an apparent ohmic resistance for generating a voltage drop" of claims 13 & 33 as well as "the measuring signals of the current supply modules are supplied to the current supply unit in parallel via the data connection" as recited in claims 14 & 34 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 18-20, 37, & 38 are objected to because of the following informalities:

Claims 18 & 37 recite the limitation "the output side" however an "output side" has not been previously disclosed. There is insufficient antecedent basis for this limitation in the claim. The claims will be examined as best understood wherein the "output side" is taken to mean "an output side".

Claims 20 & 38 recite the limitation "the input side" however an "input side" has not been previously disclosed. There is insufficient antecedent basis for this limitation in the claim. The claims will be examined as best understood wherein the "output side" is taken to mean "an input side".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 6-10, 13, 21, 23, 26-30, 33, 39, & 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to Claim 2

- The term “plasma plant” is not a term ordinary used in the art making it unclear what is meant by “...the current supply system is a plasma plant current supply system”. The claim will be examined as best understood wherein “plasma plant” is taken to mean “plasma application”.

In regard to Claims 6-10 & 26-30

Claims 6 & 26 recite the limitation of “...exactly one current supply module of each current supply unit receives the control unit” however Figure 1 shows all currently supply units “receiving” the control unit via lines 49. The claims will be examined as best understood to mean only one current supply module directly coupled to the control unit.

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In regard to Claims 13 & 33

The term “apparent ohmic resistance” is not one normally used in the art as it is unclear what differentiates an “apparent ohmic resistance” from an actual resistor. The claim will be examined as best understood wherein an “apparent ohmic resistance” is taken to mean “a resistor”.

In regard to claims 21 & 39

The claims states “...wherein the common input electrical conductor is identical to the common output electrical conductor” however it is unclear what is specifically meant by “identical” and whether this refers to its material composition or its physical structure or some other characteristic. Because of the 112 second problems, no art can be applied to claims 21 and 39.

In regard to Claims 23 & 41

The term “insulative distribution elements” is not clearly defined in the specification or disclosed in the drawings nor is a “insulative distribution element” commonly known in the art therefore it is unclear what constitutes an “insulative” distribution element. The claim will be examined as best understood to mean “insulated distribution element”.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4, 5, 11, 12, 14-16, 18-20, 23-25, 31, 32, 35, 37, 38, & 41-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al. (US 2003/0111909).

In regard to Claim 1, 24, 25

Liu et al. (hereinafter referred to as Liu) teaches:

- A plurality of current supply modules (Figure 4 ref# 214, 104) wherein each module include and input terminal via the power supply bus (ref# 402) and an output terminal via the output bus (ref# 408) (See Figure 4 & Paragraphs 45) wherein each module (214, 212) has a maximum output power and wherein multiple current supply modules are combined to form a supply unit having a maximum output power that is greater than the maximum power of the individual supply module (See Paragraph 50).
- A control unit (Figure 4, ref# 304) connected to the current supply unit via data connection (Figure 4, ref#404) (See Paragraph 45).
- A common conductor (read on by the arrow, See Figure 4) connecting the current supply modules (ref# 212A, 212B) to a common connector, read on by the connection between to common power supplies (ie. 212A, 212B) (See Figure 4).

In regard to Claim 3

- The modules (ref# 212, 214) comprising power converters (See Paragraph 46 & Figure 5).

In regard to Claim 4

- Wherein the maximum output power of all the current supply modules is the same [the examiner notes that modules 212A & 212B operate to output the same maximum power] (See Paragraph 46).

In regard to Claim 5

- A plurality of first current supply systems (ref# 502) electrically combined to form a first current supply unit having a first maximum power output (2.0V at 8-15 Amps) and a plurality of second current supply systems (ref# 504) electrically combined to form a second current supply system having a second maximum power output different from the first maximum power output (3.3 Volts at 40 Amps) (See Paragraph 46).

In regard to Claims 11, 12, 31, & 32

- Each current supply module includes a measuring device, read on by the load sharing controllers (ref# 518A, 518B) and control logic (506) which measures the output power (See Paragraphs 49 & 50 & Figure 5).

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In regard to Claims 14 & 34

- The measuring signals of the current supply modules (ref# 502, 504) supplied to the current supply unit of the control unit (ref# 304) in parallel via the data connection, read on by the parallel connection of the data bus (ref# 404) (See Figure 4 & Paragraph 51).

In regard to Claims 15 & 35

- The current supply system disposed in a switching cabinet, read on by the computer (ref# 102) (See Figure 1 & Paragraph 38).

In regard to Claim 16

- The current supply modules (ref# 502, 504) are current sources (See Paragraph 40).

In regard to Claim 18

- A common conductor (read on by the arrow, See Figure 4) connecting the current supply modules (ref# 212A, 212B) to a common connector, read on by the connection between to common power supplies (ie. 212A, 212B) (See Figure 4).

In regard to Claims 19, 20, 37 & 38

- The supply units and current supply modules being electrically connected to an input side, read on by the input bus (302) (See Figure 4).

In regard to Claims 23 & 41

- Insulated distribution elements, read on by connectors (ref# 210) for connecting the conductors with the terminals (See Figure 2 & Paragraph 39).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. and Ninomiya et al. (US 5,532,935).

Ninomiya et al. (hereinafter referred to as Ninomiya) teaches a plasma processing device read on by a computer and plasma display (See Column 3, Line 54 to Column 4, Line 17) which incorporates a current converter (81) (See Figure 2) but fails to teach a converter comprising a plurality of current supply modules.

Liu et al. (hereinafter referred to as Liu) teaches:

- A plurality of current supply modules (Figure 4 ref# 214, 104) wherein each module include and input terminal via the power supply bus (ref# 402) and an output terminal via the output bus (ref# 408) (See Figure 4 & Paragraphs 45) wherein each module (214, 212) has a maximum output power and wherein multiple current supply modules are combined to form a supply unit having a maximum output power that is greater than the maximum power of the individual supply module (See Paragraph 50).
- A control unit (Figure 4, ref# 304) connected to the current supply unit via data connection (Figure 4, ref#404) (See Paragraph 45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the current supply system of Liu into the plasma processing device of Ninomiya in place of the converter (81). The motivation would have been to provide redundant power as well as a power module capable of providing, display, computer, and auxiliary power to the system devices (See Paragraphs 32 & 33).

Claims 6-10 & 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. & Hill (US 6,362,540)

Liu teaches each current supply module (ref# 502, 504) includes a receptacle (608) for receiving the control unit (ref# 304) (See figure 6 & Paragraph 65) however fails to teach the control unit (ref# 304) connected only to one module of each current

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supply unit and instead teaches the single control unit (ref# 304) directly coupled to each module.

Hill teaches a current supply system in which a single master controller (ref# 34) directly coupled to a single module (ref# 22) of a single control unit (power blocks 1-N) whereby each other module is then transmitted the control signals via a separate data bus (ref# 36). Hill further teaches the controller comprising a computer (See Figure 1 & Column 3, Line 60 to Column 4, Line 10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a single controller connection (as taught by Hill) to only one of the modules of the control units (as taught by Liu) in which an external computer is used to directly connect to a single module to control the individual modules. The motivation would have been to provide each unit with an external controller in which a computer is used to provide greater processing capabilities than a single micro-processing computer chip and connecting the controller by directly coupling to a single module instead of a single bus would allow for better and faster troubleshooting if a fault occurred on the data connection in which the separate data line could be fixed as opposed to having to repair the more complex bus as taught by Liu.

Claims 13 & 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. & Li (US 6,166,455).

Incorporating all arguments above of the current supply system taught by Liu, Liu teaches power monitoring circuitry but fails to explicitly teach a signal matching circuit that converts a voltage into a current via a resistor.

Li teaches a monitoring circuit that uses a resistor (ref # 122) that converts current into a voltage to be monitored by the control circuit (See Column 4, Line 5 to Column 5, Line 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the signal matching circuit taught by Li into the monitoring device of Liu in which to monitor the output power. The motivation would have been to use the current to voltage conversion technique and resistor which is well known in the art in order to adequately and efficiently measure the output perimeters of the power devices.

Claims 17 & 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. & Stanford (US 5,675,480).

Incorporating all arguments above of the current supply system taught by Liu, Liu fails to teach an interlock circuit.

Stanford teaches a power supply system which uses an interlock circuit in order to disable power modules (See Column 5, Lines 5-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the interlock taught by Stanford into the current supply system taught by Liu in which the current supply modules were provided an interlock circuit. The motivation would have been to provide a means to shut off the power supply modules for safety reasons (See Stanford, Column 6, Lines 5-20).

Claims 22 & 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. & Young et al (US 7,061,139).

Incorporating all arguments above of the current supply system taught by Liu, Liu fails to teach the input terminals corresponding to a plurality of phases.

Young teaches a backup power supply system in which three phases are supplied to critical loads (See Figure 3 & Column 5, Lines 15-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the backup power supply system taught by Young et al, in which the current supply system taught by Liu is connected to a single phase of the three phase system thereby the input terminals of Liu correspond to a number of phases of a power line. The motivation would have been to provide the system with backup power.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Cavallari whose telephone number is (571)272-8541. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Cavallari

September 15, 2006



BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800